

# **US Army Attack Aviation in a Decisive Action Environment: History, Doctrine, and a Need for Doctrinal Refinement**

**A Monograph**

**by**

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## Abstract

US Army Attack Aviation in a Decisive Action Environment: History, Doctrine, and a Need for Doctrinal Refinement, by MAJ Douglas T. Lindsay, 41 pages.

The attack helicopter airframe and role evolved slowly, over time, to fulfill the missions of observation and reconnaissance, air escort, direct fire support, anti-tank, and deep attack, in support of ground elements from the platoon to the corps. This evolution was heavily influenced by technology and the Air Force's institutional territorialism. However, today's attack helicopter doctrine, heavily influenced by the Global War on Terror and the 11th Attack Helicopter Regiment's disastrous deep attack during Operation Iraqi Freedom, provides little description for attack aviation support to the division or corps. As a result, both ground and aviation commanders and planners have less doctrinal tools for employing attack helicopters at those levels. This is especially evident in the case of attack aviation support to a friendly unit in direct contact with an enemy force. Through an analysis of current doctrine and history from World War I to the present, this monograph will argue that rotary wing attack aviation can perform a variety of missions, but that attack aviation doctrine needs to be refined in two areas. First, attack aviation doctrine needs to address operations in support of the corps and division. Second, the aviation branch needs to further develop the attack mission in order to describe how commanders can better integrate attack helicopters with the ground scheme of maneuver.

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## Acronyms

ADP	Army Doctrine Publication
ACCB	Air Cavalry Combat Brigade
ADRP	Army Doctrine Reference Publication
AGI	Air-Ground Integration
AH	Attack Helicopter
AHR	Attack Helicopter Regiment
AR	Army Regulation
ARA	Aerial Rocket Artillery
ARB	Attack Reconnaissance Battalion
ARC	Attack Reconnaissance Company
AWT	Attack Weapons Team
BCT	Brigade Combat Team
CAB	Combat Aviation Brigade
CAS	Close Air Support
CCA	Close Combat Attack
CONARC	Continental Army Command
FM	Field Manual
FLIR	Forward Looking Infrared
FLOT	Forward Line of Troops
GWOT	Global War on Terror
HLZ	Helicopter Landing Zone
IA	Interdiction Attack
ID	Infantry Division
JAAT	Joint Air Attack Team

MEDEVAC	Medical Evacuation
NATO	North Atlantic Treaty Organization
NVA	North Vietnamese Army
ODS	Operation Desert Shield / Operation Desert Storm
OH	Observation Helicopter
OIF	Operation Iraqi Freedom
ROE	Rules of Engagement
SEAD	Suppression of Enemy Air Defense
SECDEF	Secretary of Defense
SWT	Scout Weapons Team
UAV	Unmanned Aerial Vehicle
WAS	Wide Area Security

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## Introduction

On 11 September 2001, members of the al-Qaeda network hijacked three commercial passenger planes and crashed them into the two towers of the World Trade Center and into the Pentagon.<sup>1</sup> The brazen terrorist attack killed approximately 3,000 Americans, caused billions of dollars in damage, and shocked the world. The United States quickly responded with a broad coalition of more than 58 states and attacked al-Qaeda and their Taliban supporters in Afghanistan. After just two months of fighting, the Taliban were driven from power, and the country was under the control of the coalition.<sup>2</sup> Less than two years later, another United States-led coalition invaded Iraq with 130,000 ground troops. After merely three weeks of ground combat, the coalition had toppled Saddam Hussein's Baathist government.<sup>3</sup> Thus, in approximately nineteen months, the US Army had gone from being a peacetime army stationed at home and abroad to an occupation army overseeing the security and development of two formerly sovereign states. As a result, American military thought and doctrine focused on force generation, counterinsurgency, and small unit tactics during an occupation that would eventually last more than ten years in Iraq and is still ongoing after more than thirteen years in Afghanistan.

Over the following decade, the wars in Iraq and Afghanistan consumed the Army in manpower, organization, and thought. In terms of manpower, by December 2011 the Army had contributed more than 1.5 million troop-years to operations in Iraq and Afghanistan.<sup>4</sup> At that

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<sup>1</sup> Geoffrey Parker, ed., *The Cambridge Illustrated History of Warfare: The Triumph of the West* (New York: Cambridge University Press, 1995), 376.

<sup>2</sup> Ibid.

<sup>3</sup> Ibid., 380.

<sup>4</sup> Dave Biocchi, "Measuring Army Deployments to Iraq and Afghanistan," RAND Corporation, no. RR-145-A (2013): 3.

same time, more than 73% of all active component soldiers had deployed at least once to one of those operations with 34% of those soldiers having dedicated 25 months or more.<sup>5</sup>

Organizationally, the Army transformed its entire operating concept, switching from combined arms divisions to a modular brigade force.<sup>6</sup> The new design divided the force into combined arms brigade combat teams (BCTs), modular support brigades, and functional brigades that could be rapidly trained, deployed, and attached to higher echelon headquarters to support overseas operations.<sup>7</sup> In terms of thought, the Army developed a series of new doctrinal manuals and concepts to address the unique challenges brought on by more than a decade of sustained overseas operations. Some of the most significant doctrinal publications included: Field Manual (FM) 3-24, *Counterinsurgency*, an effort to fill a doctrinal gap and address the deteriorating situations in Iraq and Afghanistan; Army Regulation (AR) 525-29, *Army Force Generation*, a regulation that institutionalized force generation concepts necessary to support the overseas operations; and FM 3-04.111, *Aviation Brigades*, a doctrinal manual addressing the organizational and operational concepts unique to the new modular combat aviation brigades.<sup>8</sup>

The institutional emphasis on counterinsurgency, however, had a cost. As the Army emphasized team, squad, and platoon-level training, few leaders focused on division-level operations. For example, FM 71-100, *Division Operations* was published on 28 August 1996.

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<sup>5</sup> Biocchi, 5.

<sup>6</sup> Field Manual 3-0, *Operations* (Washington, DC: Government Printing Office, February 2008), C-1.

<sup>7</sup> Ibid.

<sup>8</sup> Field Manual 3-24 *Counterinsurgency* (Washington, DC: Government Printing Office, December 2006), vii; Army Regulation 525-29 *Army Force Generation* (Washington, DC: Department of the Army, 14 March 2011), i; Field Manual 3-04.111, *Aviation Brigades* (Washington, DC: Government Printing Office, December 2007), 1-1.

That publication remained unchanged until April 2014 when the Army finally superceded it with FM 3-94, *Theater Army, Corps, and Division Operations*.<sup>9</sup> While the Army published and republished FM 3-90.6, *The Brigade Combat Team*, in a span of less than five years, it waited 18 years to produce similar updates for division-level operations.<sup>10</sup>

Although the Army emphasized small-unit operations during the first decade of the twenty-first century, Army leaders have now begun to reemphasize larger-unit operations. Army Doctrinal Publication (ADP) 3-0, *Unified Land Operations*, published in October 2011 as part of the Army Doctrine 2015 concept, describes the most likely enemy as a hybrid threat, perhaps a state actor aligned with a non-state actor, an enemy that employs both regular and irregular forces.<sup>11</sup> Such a force could employ sophisticated weaponry to the point of being a near-peer competitor. This kind of adversary could be a rogue state threatening its neighbors, a weakened state facing internal strife, or even a break-away region supplied with high-tech arms and armor by a powerful sponsor. Against such a threat, Army leaders recognized that unified land operations are essential for the Army to seize, retain, and exploit the initiative in order to put the nation in a position of relative advantage and create the conditions for a favorable peace.<sup>12</sup>

The division headquarters is the primary tactical headquarters of the US Army.<sup>13</sup> As such, it is responsible for synchronizing the elements of the land domain and adapting them to the

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<sup>9</sup> Field Manual 3-94, *Theater Army, Corps, and Division Operations* (Washington, DC: Government Printing Office, April 2014), i.

<sup>10</sup> Field Manual 3-90.6, *The Brigade Combat Team* (Washington, DC: Government Printing Office, 14 September 2010), vii.

<sup>11</sup> Army Doctrinal Publication 3-0, *Unified Land Operations* (Washington, DC: Government Printing Office, November 2011), 12.

<sup>12</sup> Ibid., 1.

<sup>13</sup> FM 3-94, 1-2.

conditions on the ground through the command of its subordinate organizations.<sup>14</sup> Therefore, it is imperative that the division-level commander and staff understand the capabilities and limitations of subordinate headquarters. However, as a modular headquarters, the division can only accomplish those tasks for which it is structured.<sup>15</sup> For that reason, the corps commander and staff, as the operational-level headquarters, have an equally important responsibility to understand those same capabilities and limitations. By doing so, the corps can ensure that the subordinate divisions are capable of conducting the tactical tasks that are necessary for the achievement of the nation's objectives.

Subordinate to the division, multifunctional support brigades are combined arms units that accomplish a broad mission. This mission supports division operations by augmenting the organic capabilities of the BCTs. One particular multifunctional support brigade is the combat aviation brigade (CAB).<sup>16</sup> The CAB is an essential element of the combined arms team that provides the division and its subordinate elements with capabilities ranging across every warfighting function and the spectrum of conflict. Some of those capabilities include reconnaissance, security, close combat attack (CCA), air assault, air movement, mission command on the move, and aeromedical evacuation.<sup>17</sup> This wide range of capabilities can be invaluable to the commander, particularly if he or she understands those capabilities and their inherent limitations.

Like division-level operations in general, aviation support to division-level operations have been neglected over the past thirteen years. While Army aviation updated its doctrine in

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<sup>14</sup> FM 3-94, viii.

<sup>15</sup> Ibid, 6-3.

<sup>16</sup> Ibid, 6-5.

<sup>17</sup> FM 3-04.111, 1-1.

August of 2003 and again in December of 2007, it has not done so since. As a result, terminology and verbage used in the doctrine have fallen out of official use, commonly used terms are undefined, and some listed organizations either face an uncertain future or no longer exist. Additionally, Army aviators have had little opportunity to train as part of a division against a near-peer competitor. The Army executes such training scenarios, called “decisive action” scenarios, at the combat training centers at Fort Irwin and Fort Polk, and those training centers focus on the training at the BCT echelon rather than the division.<sup>18</sup> Consequently, most Army aviators today are still relatively unfamiliar with supporting units larger than a battalion or brigade. While problematic for all aviators, this trend is particularly problematic for rotary-wing attack aviators. Focused in support of the battalion and below, attack aviators have almost exclusively operated in teams of two, known non-doctrinally as attack weapons teams (AWTs). Due to this lack of experience, it is uncertain if a commander or planner can count on expert aviation advice for planning or conducting division-level operations.

Despite these difficulties, commanders and operational artists must understand the capabilities inherent in the Attack Reconnaissance Battalion (ARB), the attack helicopter formation within the CAB. Furthermore, it is important they understand the limits of aviation doctrine and capabilities so that they recognize novel situations as they arise. This monograph will evaluate doctrinal and historical support of rotary wing attack aviation to an armored division in a medium intensity conflict. Through an analysis of current doctrine and history from World War I to the present, it will argue that rotary wing attack aviation can perform a variety of missions, but that attack aviation doctrine needs to be refined in two areas. First, attack aviation doctrine needs to address operations in support of the corps and division. Second, the aviation

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<sup>18</sup> Colonel Paul Calvert, “Foreword,” in *Training for Decisive Action: Stories of Mission Command*, ed. Carl Fischer (Fort Leavenworth: Combat Studies Institute Press, 2014), xvii.

branch needs to further develop the attack mission in order to describe how commanders can better integrate attack helicopters with the ground scheme of maneuver.

This monograph is divided into three sections. The first section will analyze the historically intended and actual use of attack aviation since its development prior to World War I. The second section will analyze current Army doctrine pertaining to attack aviation. The last section will summarize and conclude the monograph, provide suggestions for further refinement, and recommend implementing attack aviation in a combined arms approach to maneuver warfare.

## Section 1. Historical Analysis

### The Rise of Airpower Theory and the Loss of the Air Corps

While the history of aviation traces its roots to the fields of Kitty Hawk, North Carolina, in 1903, the Army's crucible aviation experience occurred during the US involvement in World War I. Despite purchasing its first military aircraft in 1909 from the Wright brothers, the US Army, by 1917, had fallen behind the European powers. Eager to catch up, the Army sent observers to Europe, including Colonel William "Billy" Mitchell and Major Edgar S. Gorrell.<sup>19</sup> In France, Mitchell shadowed Major General Hugh Trenchard, head of the Royal Flying Corps in France. Through Trenchard, Mitchell learned the standard European practice of dividing the air forces into strategic and tactical forces. According to Mitchell's "General Principles Underlying the Use of the Air Service in the Zone of Advance," strategic forces were responsible for destroying enemy industrial capabilities including depots, factories, transportation lines, and personnel while tactical forces were responsible for observation, tactical bombardment, and local air superiority. Mitchell's ideas were reinforced by Gorrell through the latter's liaison with Giani Caproni and the ideas of Guilo Douhet, an early prominent airpower theorist. Douhet advocated

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<sup>19</sup> Michael R. Matheny, *Carrying the War to the Enemy: American Operational Art to 1945* (Norman, OK: University of Oklahoma Press, 2011), 92-96.

two roles for aviation: a strategic bombing force and a short-range interceptor force. Mitchell and Gorrell exchanged ideas and ultimately conceptualized two principal aviation roles: strategic aviation and tactical aviation.<sup>20</sup>

During the interwar years, the US Army Air Corps began its slow march towards an independent, strategic air force. In 1920, Army aviators established the Army Air Corps Tactical School whose motto, “Progress uninhibited by tradition,” later adopted by the Air Force, conveyed the idea of airpower tactics unconstrained by ground considerations.<sup>21</sup> The school began practicing high altitude precision bombing as early as 1926 and, with the arrival of Captain Harold George in 1932, it taught a generation of air planners how to prioritize operational and strategic targets for deep air attack.<sup>22</sup> In 1935, the Air Corps had its own headquarters for bomber operations, General Headquarters Air Force. Four years later, with support from President Franklin Delano Roosevelt, the Air Corps was enlarged to include numbered air forces and a Deputy Chief of Staff for Air who, later in World War II, had his own seat on the Joint Chiefs of Staff.<sup>23</sup> Thus, by the time the United States entered World War II, the institutional precursor of the Air Force had been established as an independent strategic air arm in all but name only. That relationship continued until the National Defense Act of 1947 officially split the Air Force from the Army.<sup>24</sup>

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<sup>20</sup> Matheny, 92-96.

<sup>21</sup> James W. Williams, *A History of Army Aviation: From its Beginnings to the War on Terror* (Lincoln, NE: iUniverse, 2005), 21-22.

<sup>22</sup> Matheny, 114-115.

<sup>23</sup> Williams, 21-28.

<sup>24</sup> John McGrath, *Fire for Effect: Field Artillery and Close Air Support in the US Army* (Fort Leavenworth: Combat Studies Institute Press, 2010), 102.

## Rise of Army Aviation as Observers, Short-Range Transport, and Medical Evacuation

At the same time the Air Corps was progressing toward heavy, long-range bombing, Army units and industry were experimenting with light aviation forces. In 1936, Lieutenant Joseph Watson of the 61st Field Artillery Brigade, coordinated with William Piper for help developing concepts for aerial artillery observation. Those efforts led to extensive testing of light aircraft for the mission. In those tests, aviators in light aircraft were able to observe and adjust artillery fire within an average of two minutes. As a comparison, the Air Corps averaged seven minutes to accomplish the same task if and when their aviators were able to locate the point of impact. Such results culminated in a 6 June 1942 decision by the War Department, on the recommendation of Lieutenant General Lesley McNair, Chief of Army Ground Forces, to create an aviation force organic to the Army and separate from the Air Force. The result was the birth of organic Army Aviation as a force capable of rapidly observing and adjusting fire for Army artillery. This decision also came with the added stipulation that the Army would use organic aviation for artillery observation only and would not duplicate functions performed by the Air Force.<sup>25</sup>

US involvement in the Korean War saw the Army developing its organic aviation capabilities against the objections of the newly-independent Air Force. During the conflict, Army Aviation acted primarily as aerial observers for the artillery, but, with a lower air defense threat early in the war, aviators often conducted the mission over enemy territory. In this way, Army aviators began conducting limited aerial reconnaissance. At the same time, the development of helicopters led to Army efforts at developing medical evacuation capabilities (MEDEVAC), despite the limited carrying capacity of helicopters. The H-23, for example, was limited to just a

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<sup>25</sup> Williams, 34-37.

single patient in the summer months.<sup>26</sup> Despite the difficulties, Army aviators saved approximately twenty-one thousand lives during the war.<sup>27</sup> Furthermore, frustration with ineffective Air Force close air support (CAS) fueled the desire for organic aviation firepower, intensifying inter-service rivalries.<sup>28</sup> For example, on 26 November 1956, Secretary of Defense (SECDEF) Charles Wilson issued a memorandum in order to settle a dispute between the Army and the Air Force over the growing numbers of Army aircraft. In the memorandum, the SECDEF authorized the Army to develop capabilities to transport soldiers into the battle zone, defined as one hundred miles to either side of the line of contact. Furthermore, the SECDEF defined Army aviation functions to just four: liaison and communications; observation, fire adjustment, and topographic survey; personnel and material airlift; and MEDEVAC. Wilson specifically banned Army aviation from three functions: CAS, interdiction, and strategic airlift.<sup>29</sup> US Army aviation advocates saw the memorandum as a green light on the development of another concept: the Sky Cavalry.

### Rise of the Sky Cavalry

From 1955 to 1962, aviation advocates such as Major General James Gavin, Army G-3 and former World War II paratrooper commander, Brigadier General Carl Hutton, commander of the newly-established US Army Aviation Center, and Brigadier General Hamilton Howze, Director of Army Aviation, focused on developing a highly mobile force known conceptually as

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<sup>26</sup> Williams, 58-61.

<sup>27</sup> McGrath, 105.

<sup>28</sup> Ibid., 102-103.

<sup>29</sup> Williams, 70.

the Sky Cavalry.<sup>30</sup> The Sky Cavalry concept, expounded upon in Gavin's 1954 *Harper's* magazine article, "Cavalry – And I Don't Mean Horses," represented Gavin's response to three problems: the likelihood of an enemy nuclear strike on concentrations of friendly ground forces, the requirement to respond to subversive Soviet aggression, and the perceived immobility of US ground forces as evidenced in the Korean War.<sup>31</sup> The Sky Cavalry concept addressed these situations through developments in air-mobile troops. Such troops could operate dispersed across the battlefield conducting patrols and reconnaissance. Once an enemy was identified, troops could "mount" their helicopters and rapidly mass upon the enemy force.<sup>32</sup> In order to execute the concept, the Sky Cavalry required three aviation capabilities: reconnaissance aircraft to identify the enemy, transport helicopters to move the troops, and armed helicopters to escort the transport helicopters and provide fire support to the troops once they were on the ground.<sup>33</sup>

Though prohibited from developing CAS aircraft, the Army refined the Sky Cavalry concepts of reconnaissance and aerial transport through joint exercises such as the 1955 Exercise Sagebrush at Fort Polk, Louisiana. During the exercise, more than 110,000 Army and 30,500 Air Force personnel experimented with Gavin's Sky Cavalry tactics.<sup>34</sup> Although the Air Force strongly opposed the practice, organic Army helicopters successfully transported light infantry soldiers behind enemy lines on multiple occasions to gain valuable intelligence and support

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<sup>30</sup> Williams, 69-73.

<sup>31</sup> James M. Gavin, "Cavalry, and I Don't Mean Horses," *Harper's Magazine*, April 1954, 54-59.

<sup>32</sup> Edward P. Gavin, "LTG James M. Gavin: Theory and Influence," (master's thesis, US Army Command and General Staff College, 2012), 15-16.

<sup>33</sup> Ibid., 15-27.

<sup>34</sup> Williams, 71.

friendly maneuver.<sup>35</sup> The exercise ended with General Taylor's expressed endorsement of the Sky Cavalry concept during a press conference on 1 December 1955.<sup>36</sup>

In 1961, strategic policy changed from "massive retaliation" to "flexible response" with the election of the President John F. Kennedy.<sup>37</sup> Interested in a wider range of military options than his predecessor, President Kennedy directed his SECDEF, Robert McNamara, to develop those options within the armed forces.<sup>38</sup> As a part of these initiatives, Army aviation and Sky Cavalry received strong support on 19 April 1962, when McNamara ordered the Army to conduct aviation trials focused on mobility and "in an atmosphere divorced from traditional viewpoints and past policies."<sup>39</sup> The trials, officially known as the US Army Tactical Mobility Board, were better known as the Howze Board, after its president, Lieutenant General Hamilton Howze. Conducted during the summer of that same year, the Howze Board validated the Sky Cavalry concept.<sup>40</sup>

In the final report, Howze recommended the immediate creation of two organizations: an airmobile division and air cavalry combat brigades (ACCBs).<sup>41</sup> The airmobile division was the

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<sup>35</sup> Air Force General Weyland argued that battlefield aerial transportation from outside the battle zone to within was still a specified Air Force mission and that the Army was inappropriately duplicating that capability. See Williams, 72.

<sup>36</sup> Williams, 72.

<sup>37</sup> McGrath, 107-108.

<sup>38</sup> Ibid.

<sup>39</sup> Lieutenant General Gordon Rogers, deputy commander of Continental Army Command (CONARC), chaired two boards in 1960 that produced a myriad of recommendations for Army Aviation's future including future tests on airmobility. See Williams, 90-99.

<sup>40</sup> McGrath, 108.

<sup>41</sup> Ibid., 109.

precursor of the modern air assault division; the ACCB constituted a pure helicopter organization designed to hunt and destroy tanks.<sup>42</sup> General Herbert Powell, then director of Army Aviation, enthusiastically endorsed Howze's report and forwarded it to McNamara. McNamara later elaborated on the ACCB concept during a February 1963 address to the House Armed Service Committee:

The air cavalry brigade... would... be equipped with a large number of helicopters and would perform a role much like the horse cavalry of earlier years. Because of its great mobility, it would be very useful for attacks on the flank or rear areas of the enemy. It would be highly effective against armored penetrations as it would have large numbers of anti-tank weapons including missiles mounted on the helicopters.<sup>43</sup>

Unsurprisingly, the report was less enthusiastically received by Air Force Chief of Staff, General Curtis LeMay. He immediately ordered the Air Force's Disoway Board to disprove Howze's findings.<sup>44</sup> Nevertheless, as a result of Howze's work, the Army activated the 11th Air Assault Division (Test) on 15 February 1963, under the command of Major General Harry Kinnard.<sup>45</sup> On 28 July 1965, Kinnard's division deployed to Vietnam as the 1st Cavalry Division (Airmobile).<sup>46</sup>

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<sup>42</sup> McGrath, 109.

<sup>43</sup> Robert S. McNamara, "The Prospects for Army Air Mobility," *Army* 13, no. 8 (March 1963): 20, quoted in Vincent K. Brooks, "Back to the Future: Using Attack Helicopters to Restore Shock to the Battlefield," (master's thesis, US Army Command and General Staff College, 1991), 28.

<sup>44</sup> McGrath, 109.

<sup>45</sup> Thomas C. Graves, "The 11th Air Assault Division (Test) from 1963-1965," (master's thesis, US Army Command and General Staff College, 2000), 2-3.

<sup>46</sup> For a detailed discussion of the organizational structure of the 1st Cavalry Division upon assignment to Vietnam, see John McGrath, *The Brigade: A History: Its Organization and Employment* (Fort Leavenworth: Combat Studies Institute Press, 2004), 64.

## The Vietnam Experience and the Rise of the Modern Attack Helicopter

The Vietnam War was a time of rapid development and expansion for US Army aviation. The conflict also witnessed the development of dedicated rotary-wing attack aviation. According to James W. Williams, as early as December 1966, “Army helicopters had flown twelve times as many combat sorties as the US Air Force and Vietnamese Air Force combined.”<sup>47</sup> In 1965, upon arrival in the Pleiku Highlands of Vietnam, the 1st Cavalry Division (Airmobile) quickly learned the value of air transport. By moving through the air, as opposed to trails on the ground, 1st Cavalry Division troopers were able to avoid many of the deadly ambushes that plagued the French during their experience in Vietnam. Additionally, when contact with the enemy did occur, the Americans rapidly massed overwhelming combat power to defeat the enemy force. The airmobile structure, however, did have weaknesses. The observation helicopter (OH)-13 proved to be an inadequate platform for scouting operations. As a result, the Army replaced it with the OH-6, the predecessor of the OH-58 Kiowa. Important for the troopers, the transport aircraft proved vulnerable on approach, and the first wave of troopers were likewise vulnerable on the ground. As early as October 1962, helicopter losses prompted the Army leadership in Vietnam to request armed helicopters for escort and fire support.<sup>48</sup> This request ran headlong into the Air Force’s CAS monopoly. As a temporary solution, Army aviators experimented with arming existing helicopters. The results were armed utility helicopter (UH)-1 Iroquois (Utility Tactical Transports), and armed cargo helicopter (CH)-47 Chinooks (Guns-a-Go-Go). Deficiencies with both platforms resulted in a third option, the attack helicopter (AH)-1 Cobra.<sup>49</sup>

The requirement for armed helicopter escort and increased fire support, combined with

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<sup>47</sup> Williams, 131.

<sup>48</sup> McGrath, *Fire for Effect*, 120-121; Williams, 114-117.

<sup>49</sup> Williams, 114-117.

the Air Force's veto in the acquisition process, resulted in the development of the AH-1 Cobra, the Army's first dedicated attack helicopter. In 1964, Bell helicopter began work on an armed helicopter that, despite its load, could keep up with the UH-1 Iroquois in flight. The design used the engine, transmission, and rotor system of the UH-1 design. In doing so, Bell helicopters publicly declared that the Cobra was not a new helicopter, but rather a Huey variant. This variant included dramatically increased firepower from a 20-mm cannon and 2.75-in forward firing rockets, as well as increased station time and cruise speed. The Cobra possessed self-sealing fuel tanks and armor plating in critical areas. The first prototype flew on 7 September 1965, and the Army adopted it soon after.<sup>50</sup>

While the Army fielded the AH-1 to conduct escort for helicopter transports and immediate suppression for soldiers on the ground, the mission of the AH-1 changed over time to include aerial rocket artillery, hunter-killer gunship support, and anti-tank.<sup>51</sup> In 1966, the first change occurred when Brigadier General Robert Williams, then Director of Army Aviation, emphasized a transition from "suppressive fire" to "direct fire support." The difference is that the former emphasized the role of the Cobra as helicopter escort while the latter emphasized the role of ground support. While the Air Force objected to Army duplication of Air Force missions, Williams emphasized the level of integration and the "spectrum of firepower," arguing that what the Army was doing was not CAS but combined arms maneuver.<sup>52</sup> This maneuver included aerial rocket artillery (ARA) for ground forces, essentially using the Cobra as a maneuverable rocket battery. The Cobra experienced a similar change in mission with the development of

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<sup>50</sup> Williams, 119-121.

<sup>51</sup> McGrath, *Fire for Effect*, 120-121.

<sup>52</sup> Williams, 123.

hunter-killer teams with observation helicopters (OH). The mission began as an escort of the smaller, lighter OHs, but it became quickly evident that the pairing both maximized the firepower of the attack helicopter (AH) and the visibility from the OH. This pairing, later known as Pink Teams (white for the scout and red for the gunship), became so successful that the pairing became standard tactic, technique, and practice (TTP) Army-wide.<sup>53</sup>

Near the end of the Vietnam conflict, the 1972 North Vietnamese Army (NVA) Easter Offensive into South Vietnam pushed the Cobra into an anti-tank role due to the ground force's lack of anti-tank weapons and the size of the enemy conventional attack. As the United States withdrew its military forces from Vietnam, the North Vietnamese launched a surprise attack on the South in an effort to humiliate the United States, diminish the negotiating power of the US administration, and reverse the progress of recent South Vietnamese gains.<sup>54</sup> As opposed to the counterinsurgency warfare that had largely defined the US experience in the war, this attack involved massive conventional forces attacking from Laos and North Vietnam. Two divisions, a number of independent regiments, heavy artillery, and several hundred tanks attacked south across the demilitarized zone. Combined with their Viet Cong allies, the NVA offensive totaled a force of approximately 200,000 soldiers.<sup>55</sup>

In this conventional environment, the Cobra performed surprisingly well. During the defense of An Loc, for example, F Battery, 79th Artillery (ARA), destroyed twenty NVA T-54 tanks at the cost of eight out of thirty-two Cobra airmen. Similarly, Major General John Hill, senior military advisor to Lieutenant General Ngo Du, commander of the South Vietnamese II

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<sup>53</sup> Williams, 133-134.

<sup>54</sup> Parker, 367-368.

<sup>55</sup> Eduard Mark, *Aerial Interdiction: Air Power and the Land Battle in Three American Wars* (Washington, DC: Center for Air Force History, 1994), 371.

Corps, credited two air cavalry troops working with the 1st Aerial TOW (Tube-launched, Optically-tracked, Wire-guided missile) team with saving the city of Kontum from capture by the NVA.<sup>56</sup> Simultaneously, North Atlantic Treaty Organization (NATO) trials near Ansbach, Germany revealed that, “anti-armor helicopters employing hovering fire at standoff ranges are extremely effective in destroying enemy armor,” reliably achieving fifteen tank kills to every one helicopter lost, and, in some situations, exceeding thirty kills to every one helicopter lost.<sup>57</sup> Thus, through combat operations in Vietnam and training in Europe, the attack helicopter established itself as a formidable aerial escort, fire support platform, and anti-tank weapon.

The last evolutionary role of the attack helicopter, from the AH-1 Cobra to the AH-64 Apache, came as a result of the highly lethal battlefields of the Middle East, the armor imbalance between communist and NATO forces, and the US Army’s experience using Cobras as anti-tank weapons. In October 1973, the Middle East erupted in another conflict involving Israel and its Arab neighbors.<sup>58</sup> On the morning of 6 October, five Egyptian infantry divisions, each with an armored brigade and anti-air assets, attacked across the Suez Canal and around forward Israeli strongpoints. Simultaneously, Syrian forces attacked Israel from the north. The Israelis deployed their air forces to stop the ground assaults and mobilized their armor formations in response. Unfortunately for the Israelis, their air forces were unable to defeat enemy air defense systems while simultaneously stopping the enemy ground attacks. While Israel ultimately managed to avoid disaster, the events weakened Israel’s strategic position in the region, reinforced the virtues

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<sup>56</sup> Williams, 207; Dale Andrade, *Trial by Fire: the 1972 Easter Offensive: America’s Last Vietnam Battle* (New York: Hippocrene Books, 1995), 241.

<sup>57</sup> Williams, 207.

<sup>58</sup> George W. Gawrych, *The 1973 Arab-Israeli War: The Albatross of Decisive Victory*, (Fort Leavenworth, KS: Combat Studies Institute Press, 1996), 27-28.

of combined arms and initiative, and demonstrated the increased speed and lethality of modern warfare.<sup>59</sup>

At the same time, the US and NATO armored forces found themselves badly outnumbered by Communist armored formations on both the European continent and the Korean peninsula. The lessons of the 1973 Arab-Israeli War, applied to the force ratios in Europe and Korea, suggested that US and allied land forces would be insufficient to stop a sudden Communist attack in either theater.<sup>60</sup> This realization jarred the Army into refining its doctrine and investing in new weapon systems. Specifically, the doctrine culminated in the 1982 FM 100-5, *Operations*, often referred to as “AirLand Battle,” and the weapon systems known as the “Big Five:” the M1 Abrams tank, the UH-60 Blackhawk, the Patriot air defense missile, the M2 Bradley, and the AH-64 Apache, a tank-killing helicopter armed with anti-tank guided missiles.<sup>61</sup> This time, faced with a grave threat to national security on two different continents, the Air Force supported the development of the new dedicated attack helicopter acquisition. On 7 April 1976, the Army and Air Force chiefs of staff, General Frederick Weyand and General David Jones, wrote a joint memorandum to the House Armed Services Committee explaining that the attack helicopter was an organic part of the Army combined arms team and in no way duplicated the Air Force’s CAS mission.<sup>62</sup> On 30 September 1983, the Advanced Attack Helicopter program delivered the first batch of AH-64 Apaches.<sup>63</sup>

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<sup>59</sup> Gawrych, 79-81.

<sup>60</sup> Brian M. Linn, *The Echo of Battle: The Army's Way of War*, (Cambridge, MA: Harvard University Press, 2007), 208-209.

<sup>61</sup> Ibid., 205-209.

<sup>62</sup> Phillip B. Barks, "Anything But: Joint Air-Ground Training at the US Army Ground Combat Training Centers," (master's thesis, Joint Advanced Warfighting School, 2009), 29-30.

<sup>63</sup> Williams, 211.

## The Effect of Technology, the Deep Attack Mission and Operation Desert Storm

Three years later, Lieutenant General Crosbie Saint, the III Corps Commander and senior commander of the AH-64 first unit equipped, began testing the capabilities of the new organization as a Corps asset. Instead of supporting ground forces from overhead or from the flanks, Lieutenant General Saint devised exercises, such as Certain Strike 87, that capitalized on the new Apache's forward-looking-infrared (FLIR) night vision sensors to detect and destroy enemy armored formations well beyond the forward line of troops (FLOT). See Figure 1 for a depiction of the close, deep, and rear battlefield areas.<sup>64</sup> While concerns about aircraft survivability normally prevented such maneuvers, Saint's exercises assumed enemy air defenses were ineffective; they were either suppressed by fires or they lacked shoot-on-the-move capabilities. Such conditions presented second echelon enemy forces, maneuvering in column formation to the front, as easy targets to night deep attacks. Success with limited strikes prompted Saint to challenge his organization to think bolder: what prevented them from striking one hundred kilometers deep or even further?<sup>65</sup> Small wonder that Lieutenant General Saint pioneered the development and implementation of the deep attack mission. While a detailed analysis of the deep attack mission is beyond the scope of this monograph, other authors explore the topic in depth.<sup>66</sup>

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<sup>64</sup> Crosbie E. Saint and Walter H. Yates, "Attack Helicopter Operations in the AirLand Battle: Deep Operations," *Military Review* 68, no. 7 (July 1988): 2-4.

<sup>65</sup> Saint and Yates, 6-8; Williams, 212-213.

<sup>66</sup> John W. Brengle, "Returning the Deep Attack as an Option for the Operational Commander," (master's thesis, US Army Command and General Staff College, 2013), i; Darren W. Buss, "Evolution of Army Attack Aviation: A Chaotic Coupled Pendulums Analogy," (master's thesis, US Army Command and General Staff College, 2013), 46; Joseph D. Swinney, "The Need for Balance in Attack Aviation Employment against Hybrid Threats," (master's thesis, US Army Command and General Staff College, 2014), i.

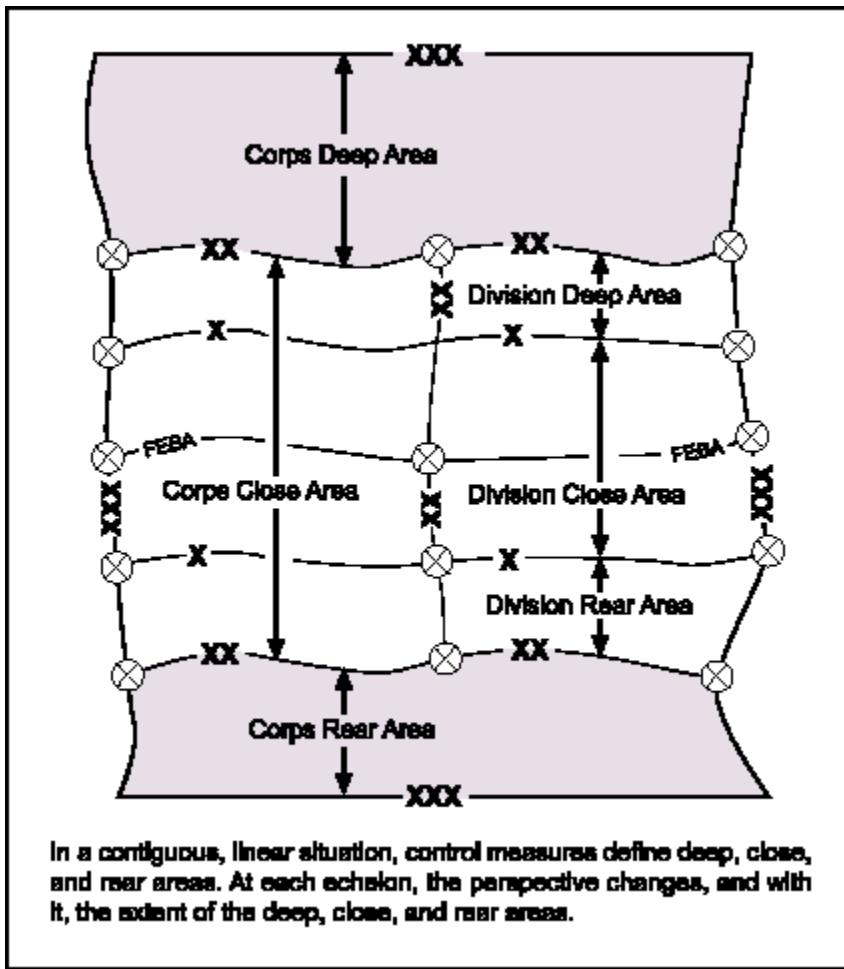


Figure 1. Close, Deep, and Rear Areas.

Source: Field Manual (FM) 3-0, *Operations* (Washington, DC: Government Printing Office, 14 June 2001), 4-26.

After its incorporation in the new AirLand Battle doctrine, and its refinement throughout the 1980s, the deep attack mission found its first operational use during the opening moments of Operation Desert Storm (ODS).<sup>67</sup> On 25 September 1990, Colonel Jessie Johnson, chief of special operations for US Central Command, asked Lieutenant Colonel Richard Cody, commander of 1st Battalion, 101st Aviation Regiment, if his unit was capable of executing a

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<sup>67</sup> Williams, 247-248.

nighttime deep attack against two early warning radar sites located more than twenty miles inside Iraq. The mission required joint operation with Air Force Pave Low helicopters and the simultaneous destruction of both radar facilities. Apaches offered the best choice due to the firepower and station time of the aircraft as well as the assumed high altitude orientation of the radar sites. Destruction of the sites would open a seam that would allow the coalition air forces to systemically destroy Iraq's sophisticated French-and Soviet-made air defense system. Failure of the mission would alert Iraq's entire defense system as to the direction and timing of the air attack. Cody affirmed that his battalion could complete the operation, and over the next three months, Cody and his battalion trained for the mission and convinced skeptics on the CENTCOM staff.<sup>68</sup>

At 0113 on 15 January 1991, White Team of Task Force Normandy, the first of the two mixed Apache-Pave Low teams departed on the deep attack operation. Red Team departed seven minutes later. By the time the first aircraft crossed the Iraqi border, at 0212, both teams had taken fire. Red Team encountered ineffective small arms fire from an unexpected outpost, and White Team drew a surface-to-air missile that missed its target.<sup>69</sup> Once at the initial position, the Pave Lows, using their superior global positioning systems, dropped flares to mark precise map coordinates, enabling the Apaches to update their inertial navigation systems. From there, the Apaches proceeded low and slow toward their targets. At 0238, both Red and White teams opened fire with Hellfire missiles. Both radar signals immediately ceased. At a range of four

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<sup>68</sup> During one particular training mission, the CENTCOM staff observed and evaluated Cody and his teams without the teams' knowledge. The mission was to conduct a night infiltration of 100 miles and strike two targets at precise time within one second's accuracy. With three seconds left on the mission, a CENTCOM observer stated, "Well, I guess they're not going to make it," just as the Apaches, undetected before the observers, opened fire on the targets. General Schwarzkopf made the final decision after COL Johnson guaranteed him 100% chance of success during a verbal conversation in December 1990. See Williams, 248-249.

<sup>69</sup> Williams, 247-251.

kilometers, the Apaches engaged the target again with multi-purpose sub-munition rockets. Moving closer to the targets, they fired 30-mm cannons and flechette rockets. The Apaches completely destroyed the targets and returned to base. The last aircraft landed near 1400. As Task Force Normandy crossed the Iraqi border again, coalition strike aircraft sped the opposite direction toward their targets. The teams' actions thus prevented the expected high loss rates to coalition aircraft and operationally validated the Apache deep attack mission.<sup>70</sup>

The deep attack mission quickly became the modus operandi for Apaches in ODS. With their high mobility, low signature, FLIR systems, and high lethality, commanders regularly sent Apaches forward to destroy enemy forces. On one such attack, on the night of 26-27 February 1991, 4th Battalion, 229th Aviation Regiment (4-229 AV), commanded by Lieutenant Colonel Roger McCauley, conducted two deep attacks against the Iraqi 10th Armor Division. Armed with over 250 Hellfire missiles, McCauley's battalion destroyed the dug-in enemy formations. Between the two attacks, 4-229 AV destroyed 53 tanks and 35 armored personnel carriers, 2 battalions worth of equipment. When the lead elements of the VII Corps arrived the following morning, they discovered formations of fully functioning but abandoned equipment.<sup>71</sup> Properly employed, the AH-64 deep strike provided the Corps commander with the ability to lethally affect the deep battle.

Overall, ODS lasted little more than 42 days, and the ground war lasted a total of one hundred hours. The war accomplished the defeat or outright destruction of approximately 36 Iraqi divisions and liberated the sovereign state of Kuwait. As for the American military, the war allegedly demonstrated the decisiveness of AirLand Battle and validated the Army "big five

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<sup>70</sup> Williams, 247-251.

<sup>71</sup> Stephen A. Bourque, *Jayhawk! The VII Corps in the Persian Gulf War* (Washington, DC: Department of the Army, 2002), 313-314.

weapon systems.”<sup>72</sup> Importantly, the years immediately prior to and during ODS witnessed the rise of the Apache deep attack mission as a highly successful way to support both the division and corps during all stages of a mid-intensity ground battle.

#### End of the Deep Attack and the 11th AHR Attack on the Medina Division

The 11th Attack Helicopter Regiment’s (AHR) attack on the Iraqi Medina Division during 2003’s Operation Iraqi Freedom (OIF) was a near-disaster that changed how the Army conceptualized attack aviation and the deep attack mission.<sup>73</sup> Prior to the US invasion, intelligence analysts realized that the condition of the Iraqi army was considerably different from 1991. They believed that only the Republican Guard units had any will to fight and that, if those units were destroyed, the rest of the Iraqi Army would collapse. As a part of its invasion route, the 3rd Infantry Division (ID) (Mechanized), commanded by Major General Buford Blount III, would attack toward Baghdad near the cities of An Najaf, Hillah, and Karbala. Intelligence analysis believed that the Medina Division was located in and around this area.<sup>74</sup> Given that information, Lieutenant General William Wallace, the V Corps Commander, ordered the 11th AHR to conduct a 23-24 March night deep attack on the 2nd Armor Brigade of the Medina Division of the Republican Guard near An Najaf.<sup>75</sup>

The tactical considerations prior to the attack did not doctrinally support a deep strike.

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<sup>72</sup> Williams, 257-258.

<sup>73</sup> Gregory Fontenot, E. Degen, and David Tohn, *On Point: The United States Army in Operation IRAQI FREEDOM* (Fort Leavenworth, KS: Combat Studies Institute Press, 2004), 179-180.

<sup>74</sup> Fontenot, Degen, and Tohn, 116.

<sup>75</sup> Williams, 394-397.

The regiment conducted the mission largely out of a sense of urgency that resulted from the rapid advance of the 3rd ID and the similarly rapid advance of bad weather. As preparations began, intelligence at the regimental and corps-levels failed to identify the actual location of the target brigade. Due to the unavailability of key assets to include Hunter and Shadow unmanned aerial vehicles (UAV), the regiment's mission unofficially evolved into a type of search-and-destroy or movement to contact mission rather than a true deep attack, since a deep attack doctrinally required a target location.<sup>76</sup> To complicate things, 3rd ID advanced from the south more rapidly than previously estimated. This resulted in the mission shifting a full 24 hours earlier. The result of the shift was that aviation fuel, still located on the ground logistics convoys enroute from Kuwait, was only partially available for the mission. The regiment was unable to fuel all aircraft prior to scheduled takeoff, resulting in only 31 of 48 aircraft available for the mission, as well as a delay of more than two hours. The mission further suffered from a lack of CAS support and ineffective suppression of enemy air defense (SEAD) fires. While SEAD was available in the form of Army Tactical Missile System and Air Force Joint Direct Attack Munitions, the location and composition of enemy air defenses was largely unknown, a strong complication for those precision munitions. To further complicate the SEAD problem, the regiment's commander, Colonel Bill Wolf, was unable to relay the mission delay to the Air Force due to a lack of working communication equipment, resulting in the air-delivered portion of the SEAD fire launching hours early. Tactically, the flight routes forced the Apaches to fly to the target directly over the top of a dense urban area. This area was well lit, illuminating the aircraft with ground lights and concealing air defense artillery systems. Finally, when the Apaches arrived to the forward arming and refueling point, they observed Iraqi civilians and vehicles freely moving

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<sup>76</sup> Fontenot, Degen, and Tohn, 179-192.

about the area with no ground security in sight.<sup>77</sup>

Unbeknownst to anyone, the Iraqis had established an elaborate and imaginative defense against helicopter incursion. With their air defense system both destroyed and proven ineffective during the first war, the Iraqis developed a new strategy. First, instead of relying on actively emitting radar sites, the Iraqis used human observers armed with standard cell phones. Second, the Iraqis dispersed their weapon systems in and around built-up areas in order to hide them from the high-altitude strikes.<sup>78</sup> Third, the Iraqis changed their preferred weapon systems from targetable fixed launch sites, to numerous, and essentially un-targetable, small arms and cannon systems. Fourth, the Iraqis developed a simple alert system to warn troops and militias about an impending helicopter strike. In the event of an attack, soldiers grabbed their weapons and immediately directed all fire skyward. City lights were turned up to full bright. Large caliber systems directed fire toward silhouetted targets. When the Apaches of the 11th AHR took off at 0115 on 24 March, the Iraqi air defenses were undamaged by the SEAD fires and were waiting for the helicopters.<sup>79</sup>

The attack mission on the Iraqi Medina Division represented a disaster for attack aviation. The mission began with the loss of one aircraft on takeoff due to brownout conditions – the loss of visibility created by rotor wash effects on loose sediment. Following that loss, the aircraft proceeded up their assigned routes that would take them directly over the cities of An Najaf and Karbala as well as over dense urban space at low altitude. Once above the urban area, the lead aircraft saw the lights of the entire region blink off for approximately two seconds. When

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<sup>77</sup> Fontenot, Degen, and Tohn, 179-192.

<sup>78</sup> Fontenot, Degen, and Tohn, 179-192; Michael R. Gordon and Bernard E. Trainor, *Cobra II: The Inside Story of the Invasion and Occupation of Iraq* (New York: Pantheon Books, 2006), 268-271.

<sup>79</sup> Fontenot, Degen, and Tohn, 179-192; Gordon and Trainor, 268-271.

the lights returned, the sky was filled with undirected, and then directed, tracer rounds of all calibers. The rules of engagement (ROE) stipulated that crews could only return fire against identified enemies, and identifying a specific enemy in a city and a hailstorm of bullets proved impossible. As a result, the Apaches did not return fire in suppression. Aircraft immediately took hits from small arms. First Lieutenant Jason King, platoon leader for B Troop, 6th Squadron, 6th Cavalry Regiment, took a bullet to the throat that nearly killed him.<sup>80</sup> With every aircraft in the formations receiving effective small arms fire, squadron and battalion commanders made the decision to abort the mission with the aircraft attempting, as best they could, to fly around the worst of the areas on the return flight. As a result of the attack, 29 of 30 helicopters returned from the mission with battle damage. One aircraft was shot down with the crew subsequently captured.<sup>81</sup> On average, the Apaches of 1st Battalion, 227th Aviation Regiment, returned with 15 to 20 holes per aircraft. One aircraft sported 29 holes of various calibers. The enemy suffered the loss of some air defense systems, a few gun trucks, and a few soldiers.<sup>82</sup>

The 11th AHR attack on Karbala had immediate implications for the other Apache units in theater. The sandstorm forced the 101st Aviation Brigade, scheduled to launch a deep attack the following night, to delay for several days. During those days, the 101st communicated with the 11th AHR and changed its plan to incorporate the lessons learned from the latter's experience, especially regarding the use of SEAD, the importance of avoiding dense urban areas, and a less restrictive ROE. As a result, on 28 March the 101st CAB executed the mission without the loss of aircraft and destroyed 10 armored vehicles, five trucks, and 20 ground soldiers. While not as

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<sup>80</sup> Fontenot, Degen, and Tohn, 187-189; Gordon and Trainor, 271-272.

<sup>81</sup> Fontenot, Degen, and Tohn, 186-189.

<sup>82</sup> Ibid.

successful as the commanders had hoped for, the mission indicated that the Apache crews could adapt their techniques based on an evolving enemy threat.<sup>83</sup>

In the immediate aftermath of the attack, commanders across the US Army debated the risks of the deep attack. Commanders recognized the danger of sending a battalion of highly expensive aircraft and highly trained crews deep across the FLOT. They questioned, under what circumstances, would the Army see fit to do so again?<sup>84</sup> When does the reward for the mission offset the possible loss of an entire battalion or even a company of attack helicopters? While the 101st deep attack proved that Army attack aviation could adapt its methods and still succeed in a dangerous operating environment, the results hardly justified the risk. The effect of such questioning was the complete removal of the deep attack mission, as well as any reference to deep operations, from attack aviation doctrine with the 2003 and 2007 revision of aviation doctrine.<sup>85</sup>

## Section 2. Doctrinal Analysis

This section of the monograph will analyze Army doctrine to describe how the Army prescribes the use of rotary wing attack aviation. The analysis will first briefly summarize others' contributions on the development and evolution of applicable doctrine. Then, the monograph will analyze the capstone doctrinal manuals of ADP and Army Doctrine Reference Publication (ADRP) 3-0, *Unified Land Operations*, continue with an analysis of the Army aviation capstone manual, FM 3-04.11, *Aviation Brigades*, and conclude with an in-depth analysis of the detailed manual for attack reconnaissance helicopter units, FM 3-04.126, *Attack Reconnaissance*

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<sup>83</sup> Fontenot, Degen, and Tohn, 191-195.

<sup>84</sup> Fontenot, Degen, and Tohn, 186-189; Buss, 46.

<sup>85</sup> Buss, 51-52.

### *Helicopter Operations.*

In their respective monographs from the School of Advanced Military Studies, “Evolution of Army Attack Aviation: A Chaotic Coupled Pendulums Analogy” and “Army Aviation and Unified Land Operations: Renewing Army Aviation’s Role and Doctrine to Dominate the Third Dimension of Land Warfare,” Major Darren Buss and Lieutenant Colonel Richard Martin describe the disparities between current Army and Army aviation doctrine.<sup>86</sup> Martin argues that current aviation doctrine has fallen behind the larger Army doctrine and no longer supports the concepts of “flexibility, adaptability, integration, and [centralized planning for] a return to centralized, maneuver-focused brigade operations.”<sup>87</sup> Buss describes the forces influencing Army attack aviation practices and doctrine by noting that the change over time is dependent on the echelon receiving attack aviation support. For example, during the 1980s and - 90s, as the corps and division headquarters were planning the deep battle called for in the 1982 FM 100-5, attack aviation doctrine adapted toward the deep battle and the deep attack.<sup>88</sup> However, with the Global War on Terror (GWOT) and the shift to sustained brigade-, battalion-, and company-focused operations, attack aviation doctrine shifted to a focus on reconnaissance, security, and small-unit operations.<sup>89</sup>

In 2011, the Army began restructuring its doctrine into an overarching concept known as *Doctrine 2015*. The concept reorganizes doctrine into a hierachal system with capstone manuals

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<sup>86</sup> Richard A. Martin, "Army Aviation and Unified Land Operations: Renewing Army Aviation's Role and Doctrine to Dominate the Third Dimension of Land Warfare," (master's thesis, US Army Command and General Staff College, 2012), 6; Buss, 1-3.

<sup>87</sup> Martin, 6.

<sup>88</sup> Buss, 1-10.

<sup>89</sup> Ibid., 55-56.

as ADPs, and the more detailed ADRPs. Army FMs and Army technique publications constitute the detailed explanation of the doctrine.<sup>90</sup> To accurately analyze Army aviation doctrine, this monograph will first analyze capstone doctrine.

The capstone manual for operations, ADP 3-0, provides overarching guidance for Army doctrine and Army forces. Additionally, it describes to our allies and interagency partners how the US Army operates and how the Army envisions unified land operations. As a capstone publication, subordinate doctrinal publications nest within its concepts.<sup>91</sup> The capstone manual, along with its accompanying reference publication, ADRP 3-0, articulates several concepts relevant to the employment of attack helicopters: combined arms, depth, and synchronization.

The first concept, combined arms, “is the synchronized and simultaneous application of arms to achieve an effect greater than if each arm was used separately or sequentially.”<sup>92</sup> Likewise, combined arms maneuver is, “the application of the elements of combat power in unified action to defeat enemy ground forces... [and] to seize and exploit the initiative.”<sup>93</sup> The central idea is that the combat arms, with their inherent strengths and weaknesses, achieve synergistic effects when employed in concert, each arm using its strength on the battlefield to cover the weakness of the other. By acting in unison, friendly forces attack an enemy from multiple directions through multiple means, denying him the ability to mount an effective coherent defense. As applied to attack aviation, the concept of combined arms implies that commanders and planners should employ rotary wing attack helicopters, with their unique

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<sup>90</sup> Army Doctrinal Publication 1-01, *Doctrine Primer* (Washington, DC: Government Printing Office, 2 September 2014), v.

<sup>91</sup> ADP 3-0, ii.

<sup>92</sup> ADRP 3-0, 1-87.

<sup>93</sup> ADP 3-0, 6.

strengths and weaknesses, in concert with other elements of the combined arms team.

The second concept, depth, “is the extension of operations in space, time, or purpose.”<sup>94</sup>

The Army concept of depth requires that Army commanders attack not only the visible formations of the enemy but also his command and control centers, fire centers, logistics centers, and echelons far behind the front line in order to prevent the enemy from responding coherently or massing his combat power. Due to the unique characteristics of the attack helicopter, specifically its speed, maneuverability and lethality, rotary-wing attack aviation offers a unique tool to achieve this effect for the ground commander.

The third concept, synchronization, is “the arrangement of military actions in time, space, and purpose to produce maximum relative combat power at a decisive place and time.”<sup>95</sup> Described in a similar fashion, synchronization involves the deliberate massing of effects at the decisive point. As applied to attack aviation and the capstone concepts of combined arms and depth, attack helicopters, regardless of the depth of employment, should be employed in order to synchronize their affects to be coincident and synergistic with other offensive or defensive actions, thereby overwhelming the enemy.

FM 3-04.111, *Aviation Brigades*, like ADP 3-0, provides an overarching framework for Army aviation. It provides basic information to aviation commanders, BCT commanders, and other personnel expecting to conduct operations with Army aviation units. Its focus is basic aviation organization and missions, command structure, employment, task force considerations, and logistical considerations.<sup>96</sup> Chapter 3, “Employment,” contributes two concepts to attack

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<sup>94</sup>ADP 3-0, 8.

<sup>95</sup> Ibid., 9.

<sup>96</sup> FM 3-04.111, viii.

helicopter support to the ground division, air-ground integration and army aviation missions.<sup>97</sup>

Air-ground integration (AGI), while not specifically defined in US Army doctrine, is the safe and effective integration of the air and ground domains. The combination of air and ground fires, through proper AGI, multiplies the effectiveness of both and is an essential element of the combined arms concept. However, due to inherent limitations in target identification from ground-to-air and air-to-ground, deliberate and detailed integration of the two domains is critical. According to FM 3-04.111, the use of fundamentals, including understanding the capabilities and limitations of each force, employment methods, and synchronization, enhances AGI. Here, the FM defines synchronization as “the merging of the air and ground fights into one with the goal being proper application of aviation capabilities in accordance with the supported BCT commander’s intent.”<sup>98</sup> Thus, the doctrine clearly envisioned the aviation brigade, to include attack aviation, fully integrating with the ground scheme of maneuver and using deliberate employment methods to enhance the capabilities and to minimize the limitations of each component.

FM 3-04.111 defines four missions performed by attack helicopters from BCT- to theater-level: reconnaissance, security, attack, and movement to contact.<sup>99</sup> Unfortunately, the FM leaves a detailed discussion of these topics to the subordinate manual, FM 3-04.126. For example, on the topic of reconnaissance, the doctrine emphasizes the maneuverability, flexibility, and range of the aircraft to extend the supported unit’s understanding of the operating environment. For security tasks, the doctrine offers the screen, the guard, and the cover missions, but states that

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<sup>97</sup> FM 3-04.111, 3-6 - 3-9.

<sup>98</sup> Ibid., 3-9.

<sup>99</sup> Ibid., 1-3.

aviation forces would have to receive significant ground augmentation in order to conduct a guard or cover.<sup>100</sup> The doctrine's main contribution on the topic comes in its delineation of attack missions: the interdiction attack (IA) and the CCA. The interdiction attack combines attack helicopters with joint fires and effects to "extend the battle to the maximum range of organic and supporting sensors."<sup>101</sup> The CCA mission supports ground troops in contact with enemy forces at a range of several meters to several thousand meters.<sup>102</sup> Still, for a deeper analysis of these missions, the doctrine refers the reader to FM 3-04.126.

FM 3-04.126, *Attack Reconnaissance Helicopter Operations*, describes how current attack aviation doctrinally operates within the aforementioned construct. The purpose of this manual is similar to its parent manual. Specifically, FM 3-04.126 is written for commanders and staffs expecting to operate or employ Army attack reconnaissance aircraft.<sup>103</sup> Structurally, the doctrine is similar to its parent structure, with chapters on missions and organization, command and control, employment, and sustainment. Substantively, the manual dedicates the majority of its pages, 120 out of 199 pages of text, to employment.<sup>104</sup>

FM 3-04.126's "Employment" chapter describes and explains the four primary missions of attack helicopter battalions. After a ten-page introduction discussing basic employment considerations, the chapter dedicates 20 pages to reconnaissance operations, 28 pages to security operations, 29 pages to attack operations, and a single page to movement to contact operations.

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<sup>100</sup> FM 3-04.111, 3-6.

<sup>101</sup> Ibid.

<sup>102</sup> Ibid.

<sup>103</sup> Field Manual 3-04.126, *Attack Reconnaissance Helicopter Operations* (Washington, DC: Government Printing Office, February 2007), vii.

<sup>104</sup> Ibid., i.

After these bulky sections, the chapter dedicates the remaining 32 pages to specific operations such as stability and civil support operations, urban operations, passage of lines, and air combat operations among others.<sup>105</sup> For determining the attack helicopter's role in the division fight, this monograph will focus on the introductory section and the primary attack helicopter missions.

The introduction provides general guidelines for attack aviation use such as "fight as an integral part of the combined arms team," "exploit firepower, mobility, and surprise," "use terrain for survivability and concealment," and "exploit capabilities of other branches and services."<sup>106</sup> The introduction describes how attack helicopters can perform both attack and reconnaissance missions, perform or contribute to decisive, shaping, or sustaining operations, and that they work best against massed moving targets or stationary point targets.<sup>107</sup>

The reconnaissance section contains both basic and detailed information on the reconnaissance tasks and techniques used by and necessary to attack helicopter reconnaissance operations. Reconnaissance operations include route, zone, area, and surveillance reconnaissance missions and are conducted at a depth determined by the factors of mission, enemy, terrain and weather, troops available, time available, and civil considerations. Attack helicopters perform reconnaissance missions predominantly through aerial reconnaissance, but can also conduct reconnaissance-by-fire when necessary, or even by dismounted reconnaissance in extreme situations.<sup>108</sup> Given their superior mobility, armament, and advanced sensor systems, attack helicopters are well suited to reconnaissance operations and, according to FM 3-94, perform such

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<sup>105</sup> FM 3-04.126, 3-1.

<sup>106</sup> Ibid.

<sup>107</sup> Ibid.

<sup>108</sup> Ibid., 3-10 – 3-20.

missions in support of the parent division.<sup>109</sup>

The chapter's security section provides the basic and detailed information pertaining to the use of an ARB to conduct security missions. These missions include the screen, guard, or cover missions used to reduce terrain and threat uncertainty, gain and maintain contact with an enemy, and provide early, accurate, and continuous information flow to the supported unit. The ARB is capable of performing the screen mission on its own, but it would require increasing augmentation in order to perform either the guard or cover missions.<sup>110</sup> The ARB conducts the mission to the front or flanks of a friendly unit to a depth that falls within the range of friendly artillery.<sup>111</sup> Though FM 3-04.126 does not specify the maximum size for a supported unit, FM 3-94 states that a CAB, that has two battalions of attack reconnaissance helicopters by its modified table of organization and equipment, can perform the mission in support of the division.<sup>112</sup>

The chapter's attack section offers the most detailed information of the publication, encompassing a full 29 pages of the text. Here the doctrine states that attack helicopters are designed, above all else, to attack both in the offense as well as in the defense: "Attack reconnaissance battalions conduct attack operations during both offensive and defensive operations. The battalion contributes to shaping the operational environment by assisting in finding, fixing, and engaging the enemy. During meeting engagements, attack reconnaissance units fight for intelligence and develop the situation."<sup>113</sup> The doctrine divides the attack missions

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<sup>109</sup> FM 3-94, 6-7.

<sup>110</sup> FM 3-04.126, 3-30 – 3-31.

<sup>111</sup> Ibid.

<sup>112</sup> FM 3-94, 6-7.

<sup>113</sup> FM 3-04.126, 3-58.

into the same two mission types as the parent doctrine: CCA and IA. The attack reconnaissance company (ARC) can perform either mission as a deliberate or hasty attack.<sup>114</sup>

The CCA mission is the most performed attack mission in support of the GWOT and is more detailed in doctrine than IA.<sup>115</sup> The chapter's attack section defines CCA as "a coordinated attack by Army aircraft against targets that are in close proximity to friendly forces."<sup>116</sup> The section defines "close proximity" as tens of meters to thousands of meters. Since the mission involves attacking enemy targets in support of ground troops, the ARC performs the mission under the direction of a ground force commander. The ground commander provides the mission request to the crews and the crews subsequently develop the attack plan. However, because of the superior situational awareness of the aircrews, the Army does not require any personnel on the ground to perform a terminal air control function, unlike in the case of CAS provided by a traditional fixed-wing platform. This is due to the lower operating altitude of the aircraft and the superiority of the sensor equipment.<sup>117</sup>

The doctrine describes the directing ground commander as a team-, platoon-, or company-level leader.<sup>118</sup> This brings into question whether CCA is an appropriate attack mission in support of a ground element larger than a company. Unfortunately, FM 3-04.126 does not clarify this question, but instead goes on to specify briefing formats and engagements techniques appropriate for a CCA. However, the language used within those paragraphs describe the "attack

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<sup>114</sup> FM 3-04.126, 3-58.

<sup>115</sup> Buss, 52; FM 3-04.126, 3-59 – 3-63.

<sup>116</sup> FM 3-04.126., 3-59.

<sup>117</sup> Ibid.

<sup>118</sup> Ibid.

reconnaissance team,” an undefined but widely-used term within the doctrine. Because of its similarity to the term “scout weapons team” (SWT), defined as a lead and wingman scout aircraft, “attack reconnaissance team” likely consists of a similar lead and wingman pairing.<sup>119</sup> Since the doctrine does not define a ground element larger than a company, and since the language detailing its implementation in support of a friendly force relates to a single pair of aircraft, it is likely that the doctrine writers did not envision the ARB employing CCA in support of echelons higher than company level.

The IA represents the alternative attack mission type for the ARB. FM 3-04.126 defines the IA as “an attack by Army aircraft to divert, disrupt, delay, degrade, or destroy enemy combat power before it can be used effectively against friendly forces.”<sup>120</sup> The chapter describes the IA, hasty or deliberate, as an appropriate attack mission for any point in the operational environment. The FM continues that the IA “combines ground based fires, attack aviation, unmanned systems, and joint assets to mass effects, isolate and destroy key enemy forces and capabilities.”<sup>121</sup> However, other than identifying what some of those key enemy forces might be and providing some implied tasks associated with the IA, FM 3-04.126 offers no further elaboration on the IA, nor does it direct the reader to any other references. While the FM dedicates three-and-a-half pages to the CCA, the manual gives the alternate form of the attack, the IA, only two paragraphs.<sup>122</sup>

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<sup>119</sup> FM 3-04.126 is the doctrinal manual for both Scout and Attack helicopters. Prior to this edition, the doctrines for each aircraft type were separate. This is the likely reason why SWT is defined and AWT and “attack reconnaissance team” are not. See FM 3-04.126, 3-2.

<sup>120</sup> FM 3-04.126, 3-63.

<sup>121</sup> Ibid.

<sup>122</sup> Ibid., 3-87.

The chapter’s movement to contact section dedicates half a page to that mission and defines movement to contact as an operation that “gains initial contact with the enemy or regains lost contact.”<sup>123</sup> The doctrinal purpose of the movement to contact is “finding the enemy force, developing the situation early, and preventing the premature deployment of the BCT main body.”<sup>124</sup> After locating the enemy force, the aircraft are free to harass the enemy and destroy elements of the enemy force using joint fires. In addition to locating the enemy force through the movement to contact, the ARB can execute a variant of the mission: the search-and-attack. The fundamental difference between the search-and-attack and the movement to contact is the purpose and scale of the operation. The search-and-attack focuses on locating and destroying small enemy forces in terrain that is either not suitable for ground maneuver or is behind friendly lines. A small-scale mission, the search-and-attack mission, is typically an economy-of-force mission associated with wide area security (WAS). Overall, while FM 3-04.126 doesn’t describe a movement-to-contact in support to echelons higher than the BCT, the newer FM 3-94 describes the mission as appropriate in support of the lead elements of the division.<sup>125</sup> Specifically, it states, “the combat aviation brigade normally screens ahead and to the flanks of the lead BCT.”<sup>126</sup>

Appendix B, FM 3-04.126, “Army Aviation Air-Ground Integration,” provides planning considerations regarding the combination of attack reconnaissance aircraft with ground elements and provides suggestions for training and employing the ARB in support of the division. The appendix stresses regular AGI training, preferably with an habitually associated ground unit, detailed risk and fratricide avoidance planning, a common understanding of the mission, and a

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<sup>123</sup> FM 3-04.126.

<sup>124</sup> Ibid.

<sup>125</sup> FM 3-04.126, 3-87; FM 3-94, 7-12.

<sup>126</sup> FM 3-94, 7-12.

general knowledge of the capabilities of both the ground and air forces.<sup>127</sup> To that end, the appendix presents lists of planning considerations, risk and fratricide avoidance charts, and organizational charts of the different BCTs. The appendix also states the preferred position of attack aviation aircraft: generally to the front, rear, or flanks of the ground element.<sup>128</sup> However, such general statements and guidelines represent the full extent of the appendix. For example, there is nothing particularly helpful in listing the preferred location of attack aviation as to the front, rear, or flanks of a friendly ground force, unless the doctrine suggests that the only location for attack aviation that is *not* preferred is *above* the ground units. Furthermore, the appendix lacks a single graphical depiction or written description of successful AGI. Thus, while the aviation or ground planner expecting aviation support might understand that detailed AGI planning is both critical and difficult, he or she will not have an understanding of what right looks like by studying Appendix B, “Army Air-Ground Integration” of FM 3-04.126.

The other pertinent section of FM 3-04.126 for this discussion is Appendix C, “Joint Air Attack Team Operations.” This section of the doctrine addresses the fundamental planning and execution considerations for conducting joint air attack team (JAAT) operations. The FM defines JAAT as “a coordinated attack by rotary and [fixed wing] aircraft, normally supported by artillery or [naval surface fire support].”<sup>129</sup> At 21 pages in length, Appendix C details how to combine those assets in a designated space against an enemy force. Unfortunately, the appendix does not describe when, or in support of what level ground unit, the use of such an operation is appropriate. In fact, the doctrine simply states that the decision to execute a JAAT is up to the

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<sup>127</sup> FM 3-94, B-8.

<sup>128</sup> Ibid., B-1 – B-16.

<sup>129</sup> Ibid., C-1.

commander's discretion and that such operations are "inherently complex and high risk operations."<sup>130</sup> Unhelpfully, the doctrine fails to relate the JAAT to any of the four basic ARB missions. The only insight provided is located in two paragraphs in the "Employment" chapter. The paragraphs, preceded by the heading, "Joint Air Attack Team," are positioned in the FM just following the section on IA. Also, the only asset listed in JAAT, but not specifically listed in IA, is fixed-wing aircraft. The only helpful information provided by Appendix C is that the use of JAAT, like other combined arms operations, uses the strength of each platform to reduce the vulnerabilities of all participants, and that the diverse employment of munitions can have a synergistic effect on a target.<sup>131</sup> Using the above information, it could perhaps be stated that JAAT is a deliberate, high-risk operation, best employed against high-value targets, that combines joint weapons platforms to minimize the risk to any particular platform and the mission as a whole. Unfortunately, the doctrine never makes that point. Also, since friendly direct fire systems are not an element of JAAT, it is likely that JAAT is conducted out of range of such systems and beyond the FLOT.<sup>132</sup>

#### Conclusion and Recommendations

The attack helicopter developed slowly, over time, to fulfill the roles of observation and reconnaissance, air escort, direct fire support, anti-tank, and deep attack, an evolution heavily influenced by technology and the Air Force's institutional territorialism. The ability of light aircraft to remain on station over a target area at low altitude contributed to the rise of organic

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<sup>130</sup> FM 3-04.126.

<sup>131</sup> Ibid., C-3.

<sup>132</sup> Ibid., C-1 – C-2.

army aircraft performing the air observation mission. The lack of enemy air defenses early in the Korean War contributed to the development of the reconnaissance mission for Army aircraft. The rise of the air assault division from the airmobile and Sky Cavalry concepts, from 1968 to 1974, contributed to the development of the aerial escort mission for armed Army helicopters.<sup>133</sup> The further need of the soldiers for immediate and responsive direct fire support in and around the helicopter landing zones contributed to the development of the fire support mission, now termed CCA. The Army's experience with the attack helicopter in operations and tests against enemy tank formations, combined with the need for more robust anti-tank platforms in Europe and Korea, led to the development of the attack helicopter as an anti-tank platform. Finally, the commander's need to strike the enemy formations deep, before the enemy formations could be committed against the commander's forces, combined with new technology, led to the development of the deep strike mission.

The attack helicopter excelled in each of those roles and missions with few exceptions, and Army doctrine has adapted accordingly. Today's reconnaissance missions are a direct growth of the observation missions performed by light aircraft in Korea. Today's close combat attack mission differs little from the direct fire support missions performed by Cobra pilots in Vietnam. Today's interdiction attack, though succinctly described in a mere paragraph of FM 3-04.126, *Attack Reconnaissance Helicopter Operations*, is what remains of the deep strike mission. Today's security missions, though grander in scale than the aerial escort mission for which the attack helicopter was developed, is a growth of the that mission as evidenced by the aerial escort, air assault security, and convoy security sections found within.<sup>134</sup>

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<sup>133</sup> McGrath, *The Brigade*, 89.

<sup>134</sup> FM 3-04.126, 3-48 – 3-54.

Yet prevailing doctrine lacks any explanation detailing how to integrate attack helicopters into the ground scheme of maneuver. Capstone doctrine clearly specifies the requirement for combined arms operations, but it leaves detailed descriptions to subordinate doctrine and certainly does not specify the role of the attack helicopter. Aviation doctrine specifies roles for the attack helicopter, but it does little to integrate combined air attacks with ground maneuver. While FM 3-04.126 is clear in describing a reconnaissance and screen mission for an attack helicopter battalion, it simply states that, once the ARC makes contact with an enemy beyond the capability of the helicopters to destroy independently, the ARC should pass the fight to the ground element.<sup>135</sup> While the doctrine describes close combat attacks, it does so only in the support of a company-level unit or smaller.<sup>136</sup>

Unfortunately, history provides limited examples of integrated maneuver. Cases of attack helicopters supporting battalion-sized operations abound in Vietnam, but only on a non-contiguous battlefield in a mostly low-intensity conflict. ODS presents numerous cases of attack helicopter deep strike missions but presents few examples of air-ground integration in support of ground maneuver. Instead, corps and division commanders routinely employed the deep strike capability to varying depths or held the battalions in reserve.<sup>137</sup> Though the aviation branch viewed the operations as tremendously effective when doctrinally employed, Army aviators reported being under-utilized and unintegrated in the ground scheme of maneuver.<sup>138</sup>

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<sup>135</sup> Doctrine states that the ARC performs the movement to contact forward of the BCT main body. If contact occurs, the ARC defeats the enemy within its capability to prevent unnecessary deployment of other assets. “Should the enemy prove to be too strong, the ARC establishes a screen and conducts a [battle handover] with friendly forces.” See FM 3-04.126, 3-87.

<sup>136</sup> FM 3-04.126, 3-59 – 3-63.

<sup>137</sup> Bourque, 338-341.

<sup>138</sup> Buss, 20.

Army commanders and aviators largely removed the deep strike mission because of the 11th AHR's disastrous attack on the Medina Division as a part of OIF.<sup>139</sup> Due to the rapid collapse of the Iraqi Army, no other doctrine or technique arose to take that mission's place. Because of that, in addition to sustained low-intensity conflicts in the GWOT, today's attack aviation doctrine reflects an approach to counterinsurgency warfare as emphasized through reconnaissance and security missions in support of the brigade level and below, and CCA in support of the company level and below.

Now, as the Army reexamines its doctrinal framework, the Aviation branch needs to reexamine how attack aviation supports unified land operations at the division and corps level. Specifically, the aviation branch needs to refine attack aviation doctrine in two areas. First, attack aviation doctrine needs to address operations in support of the corps and division. For ideas and concepts, the branch should examine previous doctrinal publications such as FM 100-5 and FM 1-112, *Attack Helicopter Operations*.<sup>140</sup> Second, the aviation branch needs to further develop the attack mission in order to describe how commanders can better integrate attack helicopters with the ground scheme of maneuver. For examples, the branch can reexamine operating concepts advocated by past military theorists such as James Gavin or the recommendations and findings of the Howze Board. By refining these areas, Army aviation can help ensure that attack aviation better support the ground commander in a combined arms approach to unified land operations.

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<sup>139</sup> Buss, 48.

<sup>140</sup> FM 1-112, *Attack Helicopter Operations*, was the doctrinal manual for attack helicopter operations until FM 3.04.126 superseded it in 2007. The former manual discussed attack helicopter support to divisional and corps headquarters in greater detail than the current doctrinal manual. See FM 1-112, *Attack Helicopter Operations* (Washington, DC: Government Printing Office, April 1997), i-iv.

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